REMARKS

Claims 1-18 are currently pending in the subject application, and are presently under consideration. Claims 1-11 are rejected. Claims 12-18 have been added. Claims 1-5 and 7-9 have been amended. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Amendments to the Specification

Paragraphs 2, 4, 8, 29, and 35 of the Specification have been amended to remedy typographical errors. This will additionally remedy the objection to paragraph 35, cited by the Office Action of the misnumbering of the demodulator bank. The Office Action suggests that it should be changed to 510. However, it has been changed in this amendment to 508 because a single demodulator is numbered 510, whereas the incorrectly numbered demodulator bank was misnumbered as 506.

II. Amendments to the Drawings

Figures 2, 4, and 5 have been amended to correct formatting errors.

III. Rejection of Claims 1-2, 4-5, 7-11 Under 35 U.S.C. §102(b)

Claims 1-2, 4-5, 7-11 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,018,659 to Ayyagari et al. ("Ayyagari"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Amended claim 1 recites a processor coupled to a position memory, the processor operable to track communication targets by the communication targets transmitting updated communication target positions in a communication uplink during an assigned uplink time slot associated with the respective communication target.

Ayyagari teaches a CPU that processes the information generated by an airborne vehicle ("AV") attitude determining mechanism and position determining mechanism to generate steering controls for the staring and hopping beam antennas for use in tracking mobile unit ("MU") positions. These positions, however, are obtained from the passive tracking system

recited in col. 9, ll. 25-43, wherein the AV sequentially steps the spot beam around the MU's true position and determines the approximate position of the MU by analyzing the MU signal strength after each receive spot beam step. In this way, the AV CPU tracks the positions of the MU's using its own trial and error signal strength detection. After establishing communication with the MU target, the AV then goes into active tracking, during which the MU is constantly monitoring signal strength of the transmission from the AV. Only when the signal strength drops below a predetermined amount does it communicate its location to the AV (col. 9, ll. 44-47).

Ayyagari does not teach or disclose that the communication target transmits its updated position in an uplink during an assigned uplink time slot associated with the respective communication target as recited in amended claim 1. Therefore, Ayyagari does not anticipate amended claim 1.

Amended claim 2 recites a processor coupled to the position memory, the processor operable to track communication targets by the communication targets transmitting updated communication target positions in a communication uplink during an assigned uplink time slot associated with the respective communication target. For at least the same reasons mentioned above with regard to amended claim 1, claim 2 is not anticipated by Ayyagari.

Amended claim 4 recites a processor coupled to the position memory, the processor operable to track communication targets by the communication targets transmitting updated communication target positions in a communication uplink during an assigned uplink time slot associated with the respective communication target. For at least the same reasons mentioned above with regard to amended claims 1 and 2, claim 4 is not anticipated by Ayyagari.

Amended claim 5 recites a method for providing communication bandwidth with a communication satellite comprising the satellite receiving a transmission of updated communication target positions in a communication uplink during an assigned uplink time slot associated with the respective communication target. As mentioned above, Ayyagari teaches that the MU is constantly monitoring signal strength of the transmission from the AV, and communicating its location to the AV only when the signal strength drops below a predetermined amount. By the action of the MU transmitting its position only when there is a loss of signal

strength, as opposed to the satellite receiving a transmission of the updated communication target positions in a communication uplink during an assigned uplink time slot associated with a respective communication target, as recited in amended claim 5, Ayyagari does not anticipate amended claim 5.

Amended claim 7 recites a method for providing communication bandwidth with a communication satellite comprising the satellite receiving a transmission of updated communication target positions in a communication uplink during an assigned uplink time slot associated with the respective communication target. For at least the same reasons mentioned above with regard to amended claim 5, claim 7 is not anticipated by Ayyagari.

Amended claim 8 recites a communication system comprising a plurality of mobile cells, including a first cell assigned to a single first communication target and a second cell assigned to a single second communication target. Ayyagari teaches (col. 5, ll. 17-19) that "an AV remains over a fixed geographical area (hereinafter cell) 109 and services that cell while flying at constant altitude along a fixed closed path." The cell as taught by Ayyagari is a fixed geographical area, and not a mobile cell as recited in amended claim 8. Therefore, Ayyagari does not anticipate amended claim 8.

Amended claim 8 also recites a position memory storing a first cell position determined by uplink transmissions to a satellite during an assigned uplink time slot from the first communication target and associated with the first cell and a second cell position determined by uplink transmissions to the satellite during an assigned uplink time slot from the second communication target and associated with the second cell. As mentioned above, Ayyagari teaches the tracking of MU positions obtained from a passive tracking system wherein the AV sequentially steps the spot beam around the MU's true position to determine the approximate position of the MU by analyzing the MU signal strength after each receive spot beam step. After establishing communication with the MU target, the AV goes into active tracking, during which the MU is constantly monitoring signal strength of the transmission from the AV, communicating its location to the AV only when the signal strength drops below a predetermined amount. Therefore, claim 8 is not anticipated by Ayyagari.

Amended claim 9 recites a communication system comprising a plurality of mobile cells, including a first cell assigned to a single first communication target and a second cell assigned to a single second communication target. Amended claim 9 also recites a position memory storing a first cell position determined by an uplink transmission to a satellite during an assigned uplink time slot from the first communication target and associated with the first cell and a second cell position determined by determined by an uplink transmission to the satellite from the second communication target and associated with the second cell. For at least the same reasons mentioned above with respect to claim 8, claim 9 is not anticipated by Ayyagari. Claims 10 and 11 depend from claim 9, and therefore should also be allowable.

For the reasons described above, claims 1-2, 4-5, 7-11 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

IV. Rejection of Claims 3 and 6 Under 35 U.S.C. §103(a)

Claims 3 and 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ayyagari in view of U.S. Patent No. 5,946,618 to Agre et al. ("Agre"). Claim 3 has been amended. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Amended claim 3 recites a communication path processing system for a communication satellite comprising a processor coupled to the position memory, the processor operable to track communication targets by the communication targets transmitting updated communication target positions in a communication uplink during an assigned uplink time slot associated with the respective communication target. As mentioned above, Ayyagari teaches the action of the MU transmitting its position only when there is a loss of signal strength, and thus neither teaches nor suggests, alone or in combination with Agre, the communication target transmitting its updated position in a communication uplink during an assigned uplink time slot associated with the respective communication target as recited in claim 3.

Claim 3 further recites an antenna generating beam spots assigned to individual communication targets, and the communication targets individually exercising control over assigned beam spots by generating updated communication target positions comprising latitude and longitude positions.

Agre teaches a ground station determining the location of a subscriber unit (analogized to the communication target), possibly using latitude and longitude components. Agre does not teach or suggest the communication targets themselves generating updated positions in a communication uplink during an assigned uplink time slot associated with the respective communication target. Claim 3 is therefore not obvious in light of the cited art. For at least these reasons, rejection of claim 3 is respectfully requested to be withdrawn.

Claim 6, which is dependent on amended claim 5, recites a satellite receiving a transmission of updated communication target positions in an uplink, wherein receiving comprises receiving latitude and longitude positions. As mentioned above, Ayyagari teaches the action of the MU transmitting its position only when there is a loss of signal strength, and thus neither teaches nor suggests, alone or in combination with Agre, the communication target transmitting its updated position in a communication uplink during an assigned uplink time slot associated with the respective communication target as recited in claim 6.

The addition of Agre does not cure the aforementioned deficiency of Ayyagari. As mentioned above, Agre teaches a ground station determining the location of a subscriber unit (analogized to the communication target), possibly using latitude and longitude components. Thus, Agre teaches that a ground station determines this latitude and longitude location, but does not teach or suggest that the communication target transmits the latitude and longitude positions in an uplink during an assigned uplink time slot associated with the respective communication target. Claim 6 is therefore not obvious in light of the cited art. For at least these reasons, the rejection of claim 6 is respectfully requested to be withdrawn.

For the reasons described above, claims 3 and 6 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

V. New Claims 12-18 Are Patentable over the Cited Art

New claims 12-18 have been added. They are patentable over the cited art for at least the following reasons.

New claim 12, which is dependent on amended claim 1, recites that the system is operative to redirect the antenna to a second communication target in response to a communication target position update from a first communication target. None of the cited references teach or suggest the redirection of an antenna to a second communication target in response to a communication target position update from a first communication target. Therefore, new claim 12, and new claim 13 which is dependent therefrom, should be patentable over the cited art.

New claim 14, which is dependent on amended claim 1, recites that the system is operative to provide a plurality of different services to a respective communication target based on receiving a request for one of the plurality of different types of services from a respective communication target, the plurality of different services being one of a fixed location spot beam, a fixed location time-shared spot beam, and a mobile dedicated spot beam. None of the cited references teach or suggest a system providing a plurality of different services to a respective communication target based on receiving a request for one of the plurality of different types of services from a respective communication target, the plurality of different services being one of a fixed location spot beam, a fixed location time-shared spot beam, and a mobile dedicated spot beam. Therefore, new claim 14 should be patentable over the cited art.

New claim 15, which is dependent on amended claim 1, recites that the phased array antenna generates beam spots that are about 0.9 degrees to about 1.0 degrees in angular diameter. None of the cited references teach or suggest a beam geometry with regard to a phased array antenna as recited in claim 15. Therefore, new claim 15 should be patentable over the cited art.

New claim 16, which is depended on amended claim 9, recites a system wherein a single first communication target is operative to redirect its respective cell to a different communication

target. None of the cited references teach or suggest a system wherein a single first communication target is operative to redirect its respective cell to a different communication target. Therefore, new claim 16, and new claim 17 which is dependent therefrom, should be patentable over the cited art.

New claim 18, which is dependent on amended claim 9, recites that the mobile cells are created from a phased array focusing technique to generate beam spots that are about 0.9 degrees to about 1.0 degrees in angular diameter. None of the cited references teach or suggest a beam geometry with regard to a phased array antenna as recited in claim 18. Therefore, new claim 18 should be patentable over the cited art.

CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

Date 3/4/04

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